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Forests in a changing environment: reversing the loss of forest cover, preventing forest degradation in all types of forests and combating desertification, including in low forest cover countries

Forests and biodiversity conservation, including protected areas

Report of the Secretary-General

Summary

The purpose of the present report is to provide an overview of forest biodiversity conservation, highlight relevant conservation approaches through sustainable forest management, and explore potential opportunities to develop closer collaborative links with biodiversity-related organizations and processes, as well as integrated work approaches.

An estimated 80 per cent of the Earth's remaining terrestrial biodiversity is found in forests, mostly in the tropics. Deforestation, mainly the conversion of forests to agriculture, and forest degradation are main drivers of forest biodiversity loss. Other significant threats to forest biodiversity include climate change, increased frequency of natural disasters, habitat destruction, invasive alien species, forest fires, forest fragmentation, unsustainable or illegal activities, and lack of financial resources for sustainable forest management.

Countries have given greater political attention to the designation of forests for conservation efforts. Biological diversity is one of the management objectives for more than 25 per cent of the world's total forests. Over 11 per cent of total forest area worldwide has been designated mainly for conservation of biological diversity. However, some forest types are disproportionally represented or still underrepresented.

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Forest-protected areas are usually successful if designed and managed in the context of sustainable forest management, with due regard given to the importance of corridors and interconnectivity of protected areas and to external threats such as pollution, climate change and invasive species. Moreover, sustainable forest management stresses the need for the conservation and sustainable use of biodiversity wherever forests exist. This is a critically important approach since most biodiversity exists in forests outside protected areas.

For many developing countries, sustainable forest management activities for forest conservation and protected forest areas have higher chances of success if activities are reflected in national development plans, poverty reduction strategies and other relevant sectoral policies or plans, such as climate change and watershed management, among others.

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I. Introduction

1. Global objective 3 of the non-legally binding instrument on all types of forests, the forest instrument,[1] agreed by the United Nations Forum on Forests at its seventh session and adopted by the General Assembly by its resolution 62/98 of 17 December 2007, commits Member States to "increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests". Closely linked to the conservation of forest biological diversity is global objective 1, which calls upon Member States to "reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation". To these ends, several measures of the forest instrument address the issue of forest conservation and protection, in particular paragraphs 6 (k), 6 (o-q) and 7 (d),[2] incorporating forest protected areas as a key element of sustainable forest management.

2. At its seventh session the Forum also adopted its multi-year programme of work for the period 2007-2015,[3] which calls for the eighth session in 2009 to address "forests in a changing environment", including the themes "forests and biodiversity conservation, including protected areas", "reversing the loss of forest cover, preventing forest degradation in all types of forests and combating desertification, including low forest cover countries", and "forests and climate change". The present report addresses the first of these interconnected issues, with the latter two being the focus of separate reports of the Secretary-General.

3. The purpose of this report is to provide an overview of forest biodiversity conservation, highlight relevant conservation approaches through sustainable forest management and to explore potential opportunities to develop closer collaborative links with biodiversity-related organizations and processes, as well as integrated work approaches. Proposals and recommendations of the Secretary-General are presented in the report on recommendations for addressing key challenges of forests in a changing environment.[4]

4. Forests and biodiversity conservation, including protected areas, is critically important for achieving the Millennium Development Goals, in particular for eradicating extreme poverty and hunger and for ensuring environmental sustainability. The Forum and its predecessors, the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests, have long considered forests and biodiversity conservation, including protected areas, among the key elements of sustainable forest management.

5. At its fourth session, the Forum, in its resolution 4/3, acknowledged forest biological diversity as one of the seven thematic elements of sustainable forest management, which are drawn from the criteria identified by existing criteria and indicators processes and offer a reference framework for sustainable forest management. This was further reinforced in paragraph 6 (b) of the forest instrument. In the years before reaching agreement on the forest instrument, the

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[1] See General Assembly resolution 62/98.

[2] For ease of reference, the actual numbering of these measures as they appear in the forest instrument has been maintained.

[3] See *Official Records of the Economic and Social Council, 2007, Supplement No. 22* (E/2007/42).

[4] E/CN.18/2009/8.

Intergovernmental Panel on Forests/Intergovernmental Forum on Forests/United Nations Forum on Forests continuum adopted 15 Intergovernmental Panel on Forests/Intergovernmental Forum on Forests proposals for action and operative paragraphs of Forum resolutions and decisions on establishing, planning and conserving forest protected areas, 11 on financing forest conservation, 6 on monitoring and assessing forest conservation, 4 on ecosystem approaches for the conservation and sustainable use of forest biological diversity and 24 on linkages and/or cooperation with the Convention on Biological Diversity.[5] At the second session of the Forum in 2002, progress in the implementation of the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests proposals for action related to forest conservation and protection of unique types of forests and fragile ecosystems were reviewed. Through the forest instrument these remain valid, since paragraph 6 (a) of the instrument calls upon Member States to develop, implement, and, as necessary, update national forest programmes or other strategies for sustainable forest management, taking into account relevant proposals for action of the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests and resolutions of the Forum.

6. This report draws from different sources, including the work of the Convention on Biological Diversity, a background paper on forest biodiversity and general literature. It also takes into account feedback from Member States, national reports submitted to intergovernmental bodies, and contributions from member organizations of the Collaborative Partnership on Forests.

II. Overview: forests and biodiversity

7. Forests are critically important for maintaining vital ecosystem functions and the services required for sustainable development, such as the conservation of biodiversity, soil conservation, water quality and supply, flood control, climate regulation and recreation. Forest biodiversity specifically contributes to providing goods such as food, fodder, medicine and timber, as well as spiritual and cultural values.

8. Since 1992, the conservation and sustainable management of forests has been discussed in a large number of intergovernmental forums. These discussions have followed two distinct courses. The first has focused primarily on sustainable forest management, building on the Forest Principles,[6] chapter 11 of Agenda 21,[7] on combating deforestation, the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests proposals for action, United Nations Forum on Forests resolutions and decisions, and, as of 2007, General Assembly resolution 62/98, on the forest instrument. These political commitments represent the most holistic international

[5] United Nations Forum on Forests Secretariat (2007), "Subject Index and thematic clustering of the IPF/IFF proposals for action", United Nations Forum on Forests resolutions and decisions and relevant Economic and Social Council resolutions; hereinafter referred to as United Nations Forum on Forests Secretariat (2007), Subject Index.

[6] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: Resolutions adopted by the Conference, resolution I, annex II.

[7] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: Resolutions adopted by the Conference, resolution I, annex I.

consensus of actions towards the management, conservation and sustainable development of all types of forests. They also recognize the worldwide diversity of social, economic, environmental, cultural and political conditions and the significant need to develop appropriate integrated approaches to advance sustainable forest management.

9. The second course focuses on issues of global significance in which forests play an important role. These include, among others, climate change, biological diversity, combating desertification, trade in endangered species, sustainable development of mountains, wetlands, and the quantity and quality of freshwater. Accordingly, forests provide services and benefits that help address some aspects of these international issues. Hence, forests are recognized in several chapters of Agenda 21, apart from chapter 11, and are included as an important element in a number of legally binding instruments.[8]

10. Recognizing the multiple benefits and functions of forests and other wooded lands therefore requires cross-sectoral policy harmonization, taking into account transboundary, regional and global dimensions and the productive, environmental and social functions of forests.[8] As noted in the forest instrument, for the effective implementation of sustainable management of all types of forests, strengthened political commitment and collective efforts at all levels are needed to include, among others, forests in national and international development agendas, the enhancement of national policy coordination and international cooperation and the promotion of intersectoral coordination at all levels.

11. For forests to effectively contribute to sustainable development, including the conservation of forest biodiversity, the Forum identified a number of issues that require further attention. These include improved governance and law enforcement, cross-sectoral policy coordination and implementation, elimination of market distortions such as perverse incentives and subsidies that favour other activities over sustainable forest management, full valuation and equitable sharing of the benefits provided by forests, capacity-building and transfer of environmentally sound technologies, and the provision of adequate financial resources for sustainable forest management.[9]

12. It is estimated that at least 80 per cent of the Earth's remaining terrestrial biodiversity is found in forests. Most is contained in tropical forests. According to the Global Forest Resources Assessment 2005 of the Food and Agriculture Organization of the United Nations (FAO),[10] forests were estimated to cover nearly 4 billion hectares in 2005. Although forest distribution is uneven around the world, of the 229 countries and other reporting areas in the Global Forest Resources Assessment 2005, 43 have forest areas exceeding 50 per cent of their total land area, while 64 have less than 10 per cent in forest cover.[11]

13. From 1990 to 2005, total global forest area loss was approximately 3 per cent, an average decrease of about 0.2 per cent per year. A drop of the net rate of forest

[8] See E/CN.17/IFF/1999/16.

[9] See E/CN.18/2009/9 for a more comprehensive and focused elaboration of means of implementation and other cross-cutting issues.

[10] Food and Agriculture Organization of the United Nations, *Global Forest Resources Assessment 2005*, Forestry Paper 147 (FAO, Rome 2005).

[11] Food and Agriculture Organization of the United Nations, *State of the World's Forests 2007* (FAO, Rome 2007).

loss was noted from 2000 to 2005. Net forest loss remains at 7.3 million hectares per year, or 20,000 hectares per day.[11] This is a considerable difference from 1990-2000, when net forest loss reached 8.9 million hectares per year.

14. Deforestation, mainly conversion of forests to agricultural land, and other types of forest degradation are main drivers of forest biodiversity loss. According to the Fourth Global Environment Outlook assessment, agriculture is the largest driver of genetic erosion, species loss and conversion of natural habitats.

15. The increasing use of energy by society has also been questioned as a factor leading to the accelerated loss of biodiversity. While local level concern centres on the threat projected to the availability and use of traditional biomass energy, national level concern focuses on energy prices and their relationship with government policies. Global views are still under debate, and the influence on climate change provoked by fossil fuel use has become increasingly researched to determine impacts on species' ranges and behaviour, livelihoods, human health and invasive alien species.[12]

16. According to on voluntary information provided for the eighth session of the United Nations Forum on Forests, significant threats to forest biodiversity and the implementation of global objectives 1 and 3 of the forest instrument, in most but not all cases, have been, and continue to be, habitat destruction, invasive alien species, forest fires, forest fragmentation, overgrazing, wind damage, negative impacts of climate change on forest ecosystems, increased frequency of natural disasters, increase in demand for wood and wood residues for energy generation, demand for biofuels, competition for wood raw material from forests (wood-based industries versus energy generation), and lack of financial resources to implement sustainable forest management.

17. Given the huge diversity of life in forests, it is difficult to make rapid direct assessments of the status or trends in forest biodiversity.[13] According to the review of the implementation of the Convention on Biological Diversity programme of work on forest biodiversity in 2008[14] forest biodiversity continues to be lost globally at an alarming rate, most significantly in the tropics, despite numerous efforts of countries to stop this trend. However, without sufficient data it is difficult to deduce at which rate forest biological diversity is currently declining globally. To address this shortcoming, there have been ongoing efforts to improve information on the status of different forest types of particular importance for biodiversity conservation and rural livelihoods. The International Union for the Conservation of Nature (IUCN) has developed Red List Indices, which provide trends in biodiversity loss. Reports show that deforestation is threatening 60 per cent of bird species classified under the Red List. In addition, the IUCN global mammals assessment (2008) concluded that one in four mammals, many of them partly or entirely forest-dependent, are threatened, according to the IUCN Red List categories.

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[12] United Nations Environment Programme, *Global Environmental Outlook: Environment for Development* (GEO4) (Valetta, Malta, 2007).

[13] N. E. Stork, T. J. Boyle, V. Dale, H. Eeley, B. Finegan, M. Lawes, N. Manokaran, R. Prabhu and J. Soberon, "Criteria and indicators for assessing the sustainability of forest management: conservation of biodiversity, Center for International Forestry Research, Working Paper No. 17 (1977).

[14] See UNEP/CBD/SBSTTA/13/3.

18. The FAO *State of the World's Forests 2007* report also lists the number of threatened or endangered species as an indicator of the status of biological diversity. Vulnerable and endangered tree species are found in great numbers in tropical countries. Approximately 5 per cent of the world's native tree species are reported to be in a threatened state, with rare and high value species most at risk of local extinction.[10] Rare tree species highly valued for non-wood forest products are also commonly in danger of becoming extinct.[11]

19. With such scenarios in sight, many countries have given greater political attention to the subject, attaching high importance to forests designated for conservation efforts. The Global Forest Resource Assessment 2005 reports that the conservation of biological diversity is one of the management objectives for more than 25 per cent of the total forest area. Since 1990, forest area for conservation has increased by 32 per cent — an estimated increase of 96 million hectares, with gains in all regions.[10] Over 11 per cent of total forest area worldwide has been designated mainly for conservation of biological diversity. These forests are mainly, but not entirely, located inside protected areas.

20. Nevertheless, much remains to be done, especially with respect to the ongoing reduction of primary forests in many tropical countries. Although covering approximately 10 per cent of the terrestrial sphere, the tropical forest biome is highly significant in global forest biodiversity conservation. The tropical forest biome contains 46 per cent of the world's forests and is home to 50 per cent to 90 per cent of terrestrial species. However, globally an estimated 6 million hectares of primary forest are lost or modified each year. From 2000 to 2005, nine of the ten countries with more than 80 per cent of the world's primary forest area lost at least 1 per cent of that area.[11]

21. About 36.4 million hectares (4.2 per cent) of tropical forests from International Tropical Timber Organization (ITTO) member countries (33 countries, with 859 million hectares of permanent forests) are managed sustainably.[15] Since 1988, ITTO has recognized a growing awareness and commitment to sustainable forest management from Governments, with many improvements in legislation, administration arrangements and consultative developments. As a result, there has been an increase of the area of sustainably managed tropical forests.[16] While progress has been made, further measures are being developed and revised to effectively implement the concept of sustainable forest management. For example, the recently revised ITTO/IUCN Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests (2008) have been recognized as potentially useful management tools for enhancing the conservation of biological diversity in production forests.[17]

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[15] According to ITTO, sustainable forest management is defined as the process of managing permanent forest land to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction in its inherent values and future productivity and without undue undesirable effects on the physical and social environment.

[16] International Tropical Timber Organization (ITTO), "Status of Tropical Forest Management 2005", ITTO Technical Series No. 24 (Japan, 2006).

[17] Christopher Wildburger, "Forests and biodiversity conservation, including protected areas" (2008).

III. Contribution of sustainable forest management to forest biodiversity conservation

22. Over the past century, forest management has evolved from sustained yield forestry to sustainable forestry, and over the last decades to sustainable forest management.[17] The forest instrument provides the elements for describing the conceptual framework of sustainable forest management. Regarding its scope (sect. III), the forest instrument states: "Sustainable forest management, as a dynamic and evolving concept, aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations". It also calls, in paragraph 6 (b) of the instrument, for Member States to "consider the seven thematic elements of sustainable forest management, which are drawn from the criteria identified by existing criteria and indicators processes, as a reference framework for sustainable forest management". Throughout the forest instrument, emphasis is given to the significant role that sustainable forest management plays in contributing to sustainable development and poverty eradication.

23. Biodiversity conservation, an essential element of sustainable forest management, is included in all nine international and regional processes on criteria and indicators for sustainable forest management. Approximately 150 countries participate in one or more of the nine ongoing processes on criteria and indicators for sustainable forest management. These processes are also designed to evolve along with new research results and relevant global developments.

24. Assessing environmental and social impacts of forest uses has been a useful tool in support of sustainable forest management. As time is required for biodiversity assessment in any system of criteria and indicators, it is important to design tools that assess the importance and conditions of management practices on biodiversity. The seven thematic elements, therefore, offer a unique potential to improve information regarding sustainable forest management practices in relation to biodiversity conservation objectives. Additional measures covering forest biodiversity-related indicators are under way in the Global Forest Resource Assessment 2010.

25. Sustainable forest management provides a holistic, cross-sectoral, participatory approach that has as an objective the sustainable use of forest resources, both timber and non-timber services and goods, to meet the needs of present and future generations. It also offers a broad toolkit that goes beyond the traditional boundaries of forest conservation, but that collectively contribute to the conservation of forest biological diversity. While conservationist approaches tend to focus on the conservation of biological diversity primarily within networks of protected areas, sustainable forest management stresses the sustainability, including protection, of biodiversity wherever forests exist. This is a critically important approach since most biodiversity exists outside protected areas.

26. Significant efforts in forest planting, landscape restoration and natural expansion of forests have contributed to enhancing social, environmental and economic conditions, including providing employment and income generation. Forests and trees are being planted at increasing rates and for many purposes. The area of plantation forests increased by about 2.8 million hectares per year during the 2000-2005 period, 87 per cent of which are productive plantations.

27. Forest landscape restoration is a further contribution, within a broader land use approach, bringing together stakeholder groups to identify, negotiate and implement practices that restore balance among the ecological, social, cultural and economic benefits of forests in a broader landscape context. The goal of forest landscape restoration is to adopt holistic measures that restore the functions of forests and enhance their contribution to sustainable development, taking into account the interests and needs of people. More than 25 countries and organizations worldwide are part of the Global Partnership on Forest Landscape Restoration. The Partnership, initiated in 2003, facilitates the exchange of experiences among members, while identifying and supporting forest landscape restoration activities, as well as the fulfilment of international commitments on forests. Together with ITTO and IUCN, the Partnership has developed a manual on restoring forest landscapes to clarify the concepts and strategies associated with forest landscape restoration. These efforts have helped to expand forest cover and counter balance losses of some forests shifted to alternative land uses.[19]

A. Sustainable forest management and protected areas

28. Global objective 3, which aims at increasing significantly the area of protected forests worldwide and other areas of sustainably managed forests, marks another major Forum commitment related to the protection of forests. Member States have agreed to increase, develop and maintain networks of protected forest areas. The importance of conserving representative forests by a range of conservation mechanisms applied within and outside protected forest areas was also called for.[18] For the Forum to increase the area of protected forests and achieve the purpose of the forest instrument, Member States committed themselves to develop and establish positive incentives.[19] In the forest instrument Member States also agreed to several other provisions related to protected forest areas.

29. Other global commitments are supportive of the global objectives of the forest instrument. With respect to the achievement of objective 3, there will be an apparent win-win outcome, if the Convention on Biological Diversity successfully establishes and maintains a terrestrial global network of comprehensive, representative and effectively managed national and regional protected area systems by 2010. Additional links can be perceived with related targets.[20] In this context, the Conference of the Parties to the Convention in 2007 decided to strengthen efforts, taking into account the target of having at least 10 per cent of each of the world's forest types effectively conserved.[21] Coupled to that was a stronger call to provide for sustainable financing of forest protected areas from all available resources.

30. The goals of protected areas have expanded in recent years. Resource management approaches have been increasingly recognized within protected areas. A broad range of terms and approaches are used to define forests with different conservation functions, such as protective functions in forests designated to protect

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[18] See General Assembly resolution 62/98, annex, sect. V, para. 6 (p).

[19] Ibid., annex, sect. VI, para. 7 (d).

[20] Convention on Biological Diversity target to include 10 per cent of all forest types in protected areas by 2010, which is also included in the Global Strategy for Plant Conservation (Conference of the Parties decision VI/9).

[21] Convention on Biological Diversity, Conference of the Parties decision IX/5.

infrastructure and manage natural resources against natural hazards. Although many of these would not be exclusively for biodiversity conservation, they still have a very important role to play in the protection of the forest landscape.

31. According to the United Nations Environment Programme Millennium Ecosystem Assessment (2005), forest protected areas are most successful if designed in the context of the ecosystem approach, and managed according to sustainable forest management, with due regard to the importance of corridors and interconnectivity of protected areas and to external threats such as pollution, climate change and invasive species. The Assessment also states that a "landscape approach", for example, that manages neighbouring production forests as buffer zones and integrates protected areas with broader regional spatial planning, helps overcome stated limitations of protected areas on their own.

32. IUCN has formulated six management categories to address the diverse objectives of protected areas. According to this classification, currently 13.5 per cent of the world's forests — more than 530 million hectares — are recognized under a protected area status.

B. Challenges and opportunities

33. Regardless of developments in forest protection during the last decade, forest degradation and the loss of forest biodiversity is still ongoing. Consequently, the current system of protected areas is not sufficient for conservation of all components of biodiversity. Protected forest areas are under threat of degradation through encroachment from agriculture and human settlements, unsustainable logging and wood harvesting, illegal activities, mining, bushmeat hunting, poaching, plant and animal collecting, fire, pollution, climate change, invasive species, and tourism and recreation. In addition, violent conflicts often have major impacts on protected areas and have led to heavy deterioration of forest ecosystems and their biological diversity, especially populations of animals. Many of these threats have to do with the interaction between conservation and human well-being, and are extremely challenging to resolve.

34. The frequency of threats within protected areas, common throughout most of the world, raises concern about whether protected areas may be undergoing understated declines and loss of species diversity, rather than serving their purpose or maintaining their values. In the past decade, game poaching in national parks and wildlife reserves and illegal trade have jeopardized rare and precious species of flora and fauna. An example of this is the poaching of Mountain Gorillas. Although numerous global and regional agreements have been adopted to combat illegal and criminal practices,[22] research shows that several regions, in particular Africa, still face a major challenge in protecting natural resources and endangered species.

35. Food security and the livelihood of numerous tropical forest-region inhabitants is a major concern, as many forest-dwelling or forest-dependent people have few alternative sources of protein and income. Unfortunately, many of the ways in which

[22] For example, at the global level, the Convention on International Trade on Endangered Species of Wild Fauna and Flora (CITES); at the regional level, the Lusaka Agreement, adopted in 1994 by east and southern African countries, provides a platform for those countries to unite and combat illegal trafficking and trade in wild fauna and flora.

hunting and wildlife trade operate, as well as their links to social, cultural, health, economic and environmental conditions, are poorly understood or not properly taken into account. It is, therefore, essential that national Governments provide better policy support for tenure resolution and for adequate development planning and control around protected areas.

36. Information from reporting on biodiversity-related conventions and agreements, and research studies also indicates that some forest types are disproportionally represented or underrepresented in forest-protected areas, such as wetlands, tropical deciduous/semi-deciduous broadleaf forest, temperate deciduous broadleaf forest, and tropical lowland evergreen broadleaf rain forest.[23] Lack of connectivity in protected areas has also been noted in several studies.[24] When reviewing the figures of the UNEP-World Conservation Monitoring Centre Global Forest Map, 19 of the 28 forest types defined have less than 10 per cent of their area under formal forest-protected status. Moreover, 20 of the 34 biodiversity hotspots defined by Conservation International report having less than 10 per cent of their area protected.[25]

37. Therefore, to exercise the full potential of protected areas for conservation, it is essential to find methodologies and criteria to assess the adequacy, consistency, condition and effectiveness of protected forest areas and to ensure that protected areas are managed sustainably to meet their conservation goals. International organizations and national agencies responsible for protected areas and conservation-related NGOs have developed a range of approaches and methodologies for assessing the management effectiveness of protected areas.

38. Assessments of protected areas are conducted at different scales and levels, from detailed site-level research to broad system level assessments.[17] A respective review lists more than 40 methodologies being applied from national to global levels.[26] These assessments have highlighted the direct correlation between management effectiveness and financial and human resources. Specifically, protected forest areas located in countries with a high Human Development Index are scoring approximately one-third higher in protected area assessments than those located in low Human Development Index countries.[27] Yet, considerable deficiencies are recognized in the management effectiveness of a number of protected areas in developed countries.

39. A critical limitation and a major challenge for establishing and effectively managing protected areas is the lack of adequate financial and fiscal mechanisms for

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[23] See "In-Depth Review of the Expanded Programme of Work on Forest Biological Diversity" (UNEP/CBD/SBSTTA/13/3); see *Global Biodiversity Outlook 2*, Conference on Biological Diversity (Montreal, 2006); see *Global Ecological Forest Classification and Forest Protected Area Gap Analysis*, UNEP/World Conservation Monitoring Centre (Freiburg University Press, Freiburg, Germany, 2008).

[24] See UNEP/CBD/SBSTTA/13/3.

[25] See *Global Ecological Forest Classification and Forest Protected Area Gap Analysis*, UNEP/World Conservation Monitoring Centre (Freiburg University Press, Freiburg, Germany, 2008).

[26] See "Management effectiveness evaluation in protected areas: a global study: Supplementary Report No. 1: Overview of approaches and methodologies", University of Queensland, Gatton, IUCN, World Commission on Protected Areas, The Nature Conservancy (TNC), World Wide Fun for Nature (WWF) (Australia 2008).

[27] Ibid.; see International Tropical Timber Organization (ITTO), "Status of Tropical Forest Management 2005", ITTO Technical Series No. 24 (Japan, 2006).

many developing counties. ITTO reports that in many regions of its member countries sustainable forest management is less profitable than other land uses and that many of the forests that are currently managed under sustainable forest management principles have achieved this through external financial and technical support.[16] The need for technical and financial assistance, however, has been poorly reflected to cover implementation costs of biodiversity conservation in sustainable forest management. Furthermore, forest-protected areas in many countries remain underfunded and understaffed. Lack of trained personnel to develop and implement management plans are additional drawbacks.

40. The design of future targets, objectives and interventions for the conservation and sustainable use of biodiversity requires additional funding. To meet the costs to effectively and sustainably implement and manage national and regional protected area systems, the Convention on Biological Diversity Conference of the Parties, in decision VIII/24, encouraged parties to elaborate financial plans, incorporating a diversity of national, regional and international sources. The Conference of the Parties also invited the Global Environment Facility to support national and regional systems of protected areas. About 80 per cent of Facility projects in their forest portfolio have focused largely on protected areas.

41. Since 1993, international financing for biodiversity conservation has increased only 38 per cent. Considerable investments have been made by NGOs, Governments and the private sector to minimize negative impacts on biodiversity and protect threatened biodiversity and for sustainable biodiversity use. Through the "Life Web" initiative, the German Government has also provided significant financial support to protected areas.[28]

42. In some countries, market mechanisms have helped in the conservation and sustainable use of biodiversity, for example, in the context of ecotourism.[29] Tax incentives, easements, tradable development permit programmes and contractual arrangements have become more common and been useful for conserving land and ecosystem services in some countries. In the context of reducing emissions from deforestation and forest degradation (REDD), currently discussed in the United Nations Framework Convention on Climate Change, protected forest areas could play a significant part in lessening national-scale deforestation. As funding for carbon sequestration grows, potential increases for sustainable forest management funding could be set with a stronger focus on forest conservation in developing countries. Consequently, growing attention has focused on supporting institutions and policies to facilitate forests and biodiversity adaptation to climate change and to help mitigate negative impacts.

43. Nonetheless, challenges remain. Possible effects on livelihoods and poverty alleviation need to be taken into account. Primary concerns in the REDD equation are the equitable distribution of benefits, as well as proper engagement and respect for the rights of indigenous populations and forest dwellers. Hence, how benefits of REDD reach local communities and enhance the participation of indigenous and traditional population, with respect to the design and implementation of REDD projects and programmes, needs to be discussed in greater detail. The Convention on

[28] See www.cbd.int/lifeweb/background/.

[29] See United Nations Environment Programme, Millennium Ecosystem Assessment (2005) (see www.millenniumassessment.org).

Biological Diversity is addressing these issues through its decisions VI/10 and VII/16, related to its article 8 (j) on traditional knowledge.

IV. Emerging developments for sustainable forest management in forest conservation and protection

44. By the end of the twenty-first century, climate change and its impacts may be among the dominant global drivers of biodiversity loss and variations in ecosystem services.[12] As noted in the report of the Secretary-General on forests and climate change (E/CN.18/2009/4), climate change is projected to adversely affect forests through changes in their physiology, structure, species composition and health, resulting from changes in temperature and rainfall. Forest types of particular importance to biodiversity conservation or rural livelihoods, such as mangrove, tropical and boreal forests, will be especially affected from a combination of factors. These forest types will require special attention in future analyses of protection and environmental sustainability.

45. Lack of access to sufficient and affordable food has always been a major underlying factor of deforestation, whereby forests are converted to agricultural lands to meet the food needs of the people. The increase in the price of food in recent years and the lack of availability of food for the poor can exacerbate deforestation and forest degradation. Similarly, current global financial crises also have the potential to threaten both the global forest cover and the amount of financial resources that Governments are allocating to sustainable forest management. There is a need to study the possible impacts of these crises on sustainable forest management and the global objectives on forests, as well as the ways and means to diminish such impacts.

46. Various policy processes at different levels are intensively discussing biofuels as an urgent political issue in view of its role in global energy security and climate change, as well as sustainable rural development options. Currently, agricultural crops are the most common biomass sources for biofuels. Nonetheless, studies have forecast that a greater amount of lignocellulose materials — second generation feedstock — including woody biomass (woody plants and residues from forestry sector) will be used for biofuel production. Already, wood residues from felling and processing make up more than half of the total biomass removed from forests.[30]

47. Views with respect to opportunities and risks to biofuels vary. In addition, conflicting interests between an increasing demand for wood — as a consequence of promoting the use of energy from renewable resources — and biodiversity protection measures are increasingly visible. The major factors determining the environmental and biodiversity impacts of biofuels are the types of lands used for producing biofuel feedstock and the production practices employed, including the plant species used.[17] The greenhouse gas balance, energy yields and environmental impacts of biofuels may differ considerably as a result of different factors.[31]

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[30] See Food and Agriculture Organization of the United Nations, "Forests and energy: key issues", Forestry Paper 154 (FAO, Rome, 2008).

[31] See *Sustainable biofuels: prospects and challenges*, RS Policy document 01/08, The Royal Society (London, 2008); A. Dufey, "Biofuels production, trade and sustainable development: emerging issues" (International Institute for Environment and Development, London, 2006).

48. Despite the negative outlook, recent studies in environmental and energy policies suggest a considerable increase in the demand for biofuels by 2030, both in developed and developing countries. Such increase in the demand for biofuels may result in changes in forest management. Several countries have started to outline short and medium-term measures to address this situation. Reducing and managing the risks while sharing the opportunities is a critical challenge. The forest sector has a critical role to play in using sustainable forest management to balance bioenergy production objectives and forest conservation goals. To develop the full potential of biofuels, its growth has to be managed in a sustainable way to meet requirements related to the economic, social and environmental dimensions of sustainability, in particular food security and sustainable forest management goals. In this regard, there is a need to establish sustainability criteria for biofuel production. Moreover, coordination and cooperation between sectors, in particular the agriculture and forestry sectors, should also be strengthened considerably.

V. Cross-sectoral cooperation for achieving forest and biodiversity commitments

Cross-sectoral approaches and the Millennium Development Goals

49. Many complex, cross-sectoral social, economic and environmental issues intersect with forests. Consequently, how forests are managed, conserved and developed is pivotal for sustainable development, including the achievement of the internationally agreed development goals, in particular with respect to poverty eradication and environmental sustainability. There are many potential synergies between the various internationally agreed goals and objectives related to forests, biodiversity, environmental sustainability and development. With regard to forests, the United Nations Forum on Forests is uniquely placed to address these interlinked challenges and relevant cross-cutting issues.

50. The high-level event on the Millennium Development Goals on 25 September 2008 brought world leaders together to discuss and translate new and existing commitments into decisive and timely action to ensure that all countries can achieve these goals. The event sent a strong message and announced new commitments[32] made by United Nations Member States, groups of States and civil society partners, including the private sector and philanthropists, to meet these goals. Among them were a number of forest and forestry-related commitments. For example, in terms of Goal 8 (develop a global partnership for development), Finland announced an increase of sustainable forestry financing as part of its development cooperation. Regarding Goal 7 (ensure environmental sustainability), Norway announced $35 million for financing the initial phase of the $600 million United Nations REDD programme.[33] Norway also committed to contribute up to $1 billion for reducing deforestation in the Amazon region. The Global Environment Facility also announced a strategic programme for West Africa in excess of $100 million to address energy, biodiversity and persistent organic pollutants.

[32] See www.un.org/millenniumgoals/2008highlevel/commitments.shtml.

[33] The United Nations REDD programme aims to assist developing countries to develop national REDD strategies, monitor forest cover and carbon stocks, build capacity and implement pilot projects on forest management that maintain ecosystem services of forests and maximize carbon stocks while delivering community and livelihood benefits.

Increased cooperation with relevant biodiversity-related processes and non-governmental organizations

51. Governing bodies of multilateral environmental agreements, organizations and processes have recognized the need for better coordination and collaboration. A number of United Nations declarations, resolutions and decisions call for coordination, closer collaboration and synergies among respective processes, including with the United Nations Forum on Forests and the Collaborative Partnership on Forests.

52. Considering the various global political developments, it has become even more relevant for the United Nations Forum on Forests to maintain and reactivate linkages with other global and regional processes. Forum resolution 3/4, on enhanced cooperation and cross-sectoral policy and programme coordination, addressed several aspects related to collaborative work with relevant organizations of the United Nations system and other relevant international and regional organizations, institutions and instruments to improve information exchange and cooperation in areas of common concern.

53. Globally, there are several groups supporting forest biodiversity conservation. Established in 2001, the Collaborative Partnership on Forests, a voluntary cooperative arrangement comprised of 14 forest-related international organizations, institutions and convention secretariats, supports the work of the United Nations Forum on Forests through enhanced cooperation and coordination on forest issues that promote the management, conservation and sustainable development of all types of forests. The Biodiversity Liaison Group, consisting of the heads of the secretariats of the six biodiversity-related agreements,[34] was established in 2004 and has focused work on a compilation of case studies, joint workplans for the convention bodies and indicators for assessing progress towards the achievement of the 2010 biodiversity target. The Joint Liaison Group of the Rio Conventions is made up of the secretariats and office-holders of the scientific subsidiary bodies of the Convention on Biological Diversity, the United Nations Convention to Combat Desertification and the United Nations Framework Convention on Climate Change. While increasing coordination among the three conventions, the group works to improve the exchange of information and to explore opportunities for synergistic activities.

54. At the global and regional levels, a number of international NGOs and civil society organizations have been playing a beneficial role in raising awareness of forest conservation and protection among the general public. Some national NGOs and indigenous peoples' organizations have also undertaken similar activities at the local level. Regardless of developments, increased public awareness, education and communication programmes are uneven in several countries. Providing the human and financial resources to undertake effective work remains a barrier.

55. Since information availability is important to society, many Governments and private organizations have started to promote the development of outreach activities to improve communication and public education to achieve the objectives of

[34] Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Ramsar Convention, the Convention on Migratory Species, the World Heritage Convention and the International Treaty on Plant Genetic Resources for Food and Agriculture.

environmental conventions, sustainable development, and sustainable forest management. Such developments could be further explored in terms of the work of the Forum to help promote and celebrate the International Year of Forests in 2011.

Cooperation and collaboration among secretariats

56. Promoting synergies and strengthening cooperation has been addressed in various decisions of the Convention on Biological Diversity and the Forum. In this context, the Conference of the Parties to the Convention, in paragraph 1 (i) of its decision IX/5 on forest biodiversity, called for an increase of cross-sectoral coordination and initiatives at all levels. A particular reference was made to facilitate coordinated implementation of both the programme of work under the Convention and the work of the Forum, including the forest instrument, for achievement of the 2010 biodiversity target and the four global objectives on forests. Paragraph 3 (d) of the same decision requested the Convention Executive Secretary to explore, together with the Director of the secretariat of the United Nations Forum on Forests, possibilities for developing a workplan with joint activities between the secretariats of the Convention and the Forum.

57. Limited views were received from countries regarding potential elements necessary to enhance collaboration between secretariats. Of those countries that responded, some were supportive of enhancing collaboration, as called for in the Conference of the Parties decision IX/5, bearing in mind the involvement of other organizations, in particular members of the Collaborative Partnership on Forests. While addressing this subject, the Forum could also offer proposals on how best to enhance cooperation for forest biodiversity conservation, especially through the forest instrument. For example, there is great potential for promoting and strengthening public understanding of the importance of, and the benefits provided by, forests and sustainable forest management, through public awareness programmes and education. Possible joint activities between the forest and environmental sectors are worth exploring in order to help raise awareness of and promote communication on the International Year of Biodiversity and the International Year of Forests, to be observed in 2010 and 2011, respectively.

National forest programmes and national biodiversity strategies and action plans

58. Greater opportunities for cross-sectoral cooperation and communication have also been encouraged at the national level, bringing together Governments, donors, civil society and the private sector as partners in the delivery of effective conservation and management. National initiatives for collecting information on sustainable forest management, including forest biodiversity, could provide an opportunity to improve communication and enhance synergies between sector policies. Increased stakeholder participation, involvement and transparency would also be essential to strengthen national communication efforts. Stakeholder participation contributes to the decision-making process because it allows for a better understanding of impacts and vulnerability, the distribution of costs and benefits associated with trade-offs, and the identification of a broader range of response options. Stakeholder involvement and transparency of decision-making can increase accountability and reduce corruption.

59. Establishing visible links to national sustainable development strategies, national poverty reduction strategies, national climate change mitigation and

adaptation strategies, and national communications in the framework of the United Nations Framework Convention on Climate Change are also needed for successful implementation of national forest programmes and national biodiversity strategies and action plans. In the case of many developing countries, sustainable forest management activities for forest conservation and protected forest areas have higher chances of success if activities are reflected in national development strategies or in poverty reduction strategies. On one hand, poverty reduction strategy papers could promote greater awareness of the forest sector's role in poverty eradication, and on the other hand, development plans can be more effective when taking into account sustainable forest management practices.

60. In this context, the potential of the forest instrument could be useful to reinforce practical measures at the national level to integrate forests more closely with other policies. Increased coordination between national focal points of the Forum and of the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity, the United Nations Convention to Combat Desertification and other Collaborative Partnership on Forests organizations could ensure that actions are consistent with those decided in the instrument and the global objectives on forests.

VI. Conclusions

61. **Accounting for about 30 per cent of the terrestrial sphere, forests provide a wide range of environmental, social and economic services and benefits. Forests contribute to the livelihoods of 1.6 billion people. About 60 million people, mainly indigenous communities, live within forests, and another 350 million people are highly dependent on forests. Through the provision of forest products and the multiple benefits that forests provide, such as watershed protection, global climate change control, income generation, health advantages, recreation, and the protection of cultural and spiritual values, as well as habitat for a number of flora and fauna, all populations, in varying degrees, gain from forests.**

62. **The political importance of forests designated for conservation purposes has increased in many countries. Furthermore, the conservation of biological diversity in forests has been widely recognized as an important sustainable forest management objective. Over 11 per cent of total forest area worldwide has been designated mainly for conservation of biological diversity.**

63. **Despite progress made in advancing the sustainable management of all types of forests, deforestation and biodiversity loss remains a serious concern in many countries, especially developing ones. A number of pressures, including the negative impacts of climate change, natural disasters, forest fires, airborne pollution, unsustainable recreational use, forest fragmentation, invasive alien species, conversion of forests to agriculture and inoperative financial and technical resources for sustainable forest management implementation, continue to threaten the world's forest biodiversity, thus diminishing the full range of ecosystem goods and services that biologically diverse forests are able to provide.**

64. **Building on the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests proposals for action and the Forum decisions, Member States**

adopted the forest instrument and the global objectives on forests to strengthen actions on a number of sustainable forest management components, including forest conservation and protected forest areas at all levels. Recognition of protected forest areas as important means in sustainable forest management for securing the conservation of biodiversity in specific sites has increased over the years.

65. For sustained forest protection, effective management approaches and assessments in meeting conservation goals are needed. Institutional options and improved policy measures are required to promote the fair and equitable sharing of the costs and benefits of protected areas at all levels. However, the designation of a forest area as protected is not enough to ensure effective conservation. Therefore, the effective management of protected areas is of critical importance to conservation efforts.

66. International organizations and national agencies responsible for forest protection and conservation-related NGOs have developed a range of approaches and methodologies for assessing the management effectiveness of protected areas. Yet, there is still a need to ensure that such assessment methodologies and related developments are adequately shared. There is a need to improve the capacity of many countries to undertake analyses, report findings and help improve policy initiatives. Forest types of importance for biodiversity conservation, such as tropical montane cloud forests, mangrove forests and riparian forests, will require particular attention in future protection analyses.

67. Emerging issues for forests such as climate change and biofuels require further discussion when addressing forest biodiversity conservation. For example, the forest community can significantly contribute to the formulation and implementation of possible solutions to climate change such as REDD schemes. Adequate sustainable development and sustainable forest management policies are needed to avoid negative climate change impacts and to strengthen cross-sectoral cooperation and coordination to achieve forest and biodiversity commitments.

68. For many developing countries, sustainable forest management activities for forest conservation and protected forest areas have higher chances of success if activities are reflected in national development plans, poverty reduction strategies and other relevant sectoral policies or plans, such as climate change and watershed management, among others.

69. The International Year of Biodiversity in 2010 and the International Year of Forests in 2011 provide an excellent opportunity for cooperation between the forest and environmental sectors in raising awareness on sustainable forest management and the conservation of forest biological diversity.

70. Achieving the global development goals, as well as the forest instrument, is a major challenge requiring countries, intergovernmental organizations and stakeholders to collaborate in implementing a shared framework and raising awareness of the important benefits and contributions provided by forests. Improving communication and public education will be increasingly important in this regard, particularly in promoting and celebrating the International Year of Forests.